

# NM VILLI+

- NM Stimulates gut development
- NM Improves animal performance
- NM Efficient target release of butyrate

**NM VILLI+:** A specialized additive containing over 95% di- and triglycerides of butyric acid. This product successfully delivers butyrate to the gut, promoting beneficial bacterial growth, improving integrity and villi height.

One of the main issues in the livestock industry is efficient and sustainable animal production. Several factors such as raw material prices and increasing worldwide competition force farmers to optimize their production cycles. Animal health is an important parameter for efficient production and is mainly determined by gut health. A healthy well-developed gut is needed for efficient nutrient uptake to achieve sufficient growth and efficient FCR. Also, the intestines are the body's first immune defense barrier and therefore play an important role in the animal's resilience to invading pathogens.

#### **EFFECTIVE SOURCE OF ENERGY**

However, due to a variety of stress factors such as pathogenic load, change of feed and social groups, especially in young animals the gut might be underdeveloped resulting in decreased digestion and immunity. It is known that butyric acid is an effective energy source for the epithelium cells. Butyric acid increases the length of the villi and the small intestine and thus butyric acid increases the absorption surface for in-feed nutrients. However, butyric acid has a strong smell and is corrosive, making handling unpleasant. Current coating techniques are not able to fully overcome the problem of smell, and show insufficient target delivery.

Therefore, alternative forms of butyric acid type products are needed to stimulate gut development.

Promote Overall Vitality  
and Well-being

# VILLI+

## ACTIVE INGREDIENTS

**NM** TRIBUTYRIN

## CHARACTERISTICS

**NM** AVAILABLE IN 25 KG BAG, 1000 KG BIG BAG    PRODUCED IN  
GMP+ CERTIFIED FACILITIES **DOSAGE NM** 1.0 - 3.0 KG/TON



**NM VILLI+** a specialized additive containing over 95% di and triglycerides of butyric acid carefully mixed with essential oils. This product successfully delivers butyrate to the gut, promoting beneficial bacterial growth, improving integrity and villi height.

Di- and triglycerides of butyrate deliver butyrate fatty acids to the intestine, giving energy to the colonocytes and promoting a symbiotic relationship between the intestine cells and microbiota to enhance villi structure and height, resulting in better nutrient uptake and performance parameters. Also, di- and triglycerides of butyrate are non-smelling, non-corrosive and easy to handle.